ORGANIZATIONAL STRUCTURE OF THE SPECIAL OPERATIONS DIVISION OF THE VIRGINIA BEACH FIRE DEPARTMENT

EXECUTIVE DEVELOPMENT

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ABSTRACT

Specialized incident response capabilities have grown over the past decade to a point that facilitates the need to examine the organizational structure of the fire department. The problem was the Virginia Beach Fire Department (VBFD) had instituted a variety of specialty programs over the years without altering the organizational structure of the special operations division to meet increased demands.

The purpose of this project was to compare the structure of the VBFD special operations division with other fire departments, national standards, and academic organizational theory models in order to better design the division. An action research methodology was employed to answer the following questions:

1. What are the national standards that address fire department special operations structure?
2. What are the specialty programs the VBFD must deliver and how do they compare with what other fire departments deliver?
3. How do the classic academic models of organizational theory compare to how the VBFD is structured?

The procedures utilized to complete this research were a review of special operations related literature and national standards, surveys of chief officers within the VBFD and around the country, and traditional organizational theory models.

The results showed the need for the VBFD to redesign the structure of the organization in an effort to enhance service delivery related to special operations functions. This was shown as a result of what the chief officers of the VBFD felt were necessary specialty programs to deliver,

combined with trends across the country and other organizational theory models.

Recommendations included; a new fire operations organizational structure with a dedicated special operations battalion, utilizing selection criteria to place personnel in the specialty functions, developing the current administration position, and expansion of current specialty capabilities.

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INTRODUCTION

The Virginia Beach Fire Department (VBFD) is comprised of 360 uniformed personnel and 23 support staff chartered with delivering fire and emergency medical services to the citizens and visitors of the city. The department covers 310 square miles with twenty engine companies and five ladder companies. Virginia Beach is the most populous city in the Commonwealth and the 37th largest city in the United States with 439,889 residents (VBFD Quarterly Report, 1999).

In the middle to late 1980's the department began the process of developing its specialty capabilities. This was started by the Superfund Amendments and Reauthorization Act of 1986 (SARA) which established a national baseline for training and response to chemical emergencies (FEMA, 1992). In addition to hazardous materials capabilities, the department realized the need for specialized rescue techniques as a result of a trench collapse incident that trapped and killed an underground utility worker in 1987. A confined space incident that killed a Fire Captain and a civilian employee at the Little Creek Naval Station, in the fall of 1998, further defined the need for specialty teams. As a result of these incidents, the department performed a risk analysis of the types of incidents it was capable of mitigating. Once identified, the risks were evaluated based on frequency and severity (Loflin, 1997). It was determined that specialized rescue was needed in order to provide enhanced service to the community.

Moving forward over the next decade, the VBFD added many programs to its service delivery process. Adding programs without modifying the structure of the Special Operations Division stressed the organization in two basic areas; span of control and unity of command (IFSTA,1989). The problem that precipitated this project was the Virginia Beach Fire

Department had instituted a variety of specialty programs over a number of years without altering the organizational structure of the Special Operations Division to facilitate increased demands.

The purpose of this applied research project was to compare the organizational structure of the VBFD Special Operations Division with other fire departments, national standards, and academic organizational theory models in order to better design the division to improve service to the department and the community. An action research methodology was employed to answer the following questions:

1. What are the national standards that address fire department special operations structure?
2. What are the specialty programs the VBFD must deliver and how do they compare with what other fire departments deliver?
3. How do the classic academic models of organizational theory compare to how the VBFD is structured?

BACKGROUND AND SIGNIFICANCE

The VBFD built its reputation of being on the cutting edge of special operations throughout the past decade. This has been facilitated by motivated personnel going out and getting training (some becoming experts in their fields) and bringing that knowledge back to the organization. Also, Chief Officers willing to undertake the necessary challenges to gain acceptance from the city government have bolstered the programs. A key undertaking that greatly increased the VBFD's presence in the specialized rescue arena was a response to

Charleston, South Carolina in the fall of 1989 to render assistance to the city that was struck by Hurricane Hugo (VBFD,1998). This category four hurricane caused widespread damage throughout the city of Charleston, and Virginia Beach's Mayor made it clear that the VBFD would respond with its trained personnel and equipment. The notoriety gained from this event set the ground work for the VBFD to be able to secure the necessary support to build the special operations function.

There are many other contributing factors that have led to the present situation. Increases in technology have dictated that the VBFD must be prepared to respond to situations involving a hybrid of industrial situations that utilize hazardous chemicals and processes**.** Many fire departments have recognized the need for development and deployment of specialized personnel or teams in order to handle those incidents that demand a greater degree of technical training, enhanced tactical capabilities and expanded incident management in order to control incidents (Naum, 1993).

Budgetary constraints are another factor that has led to the current situation. Increasingly, public service organizations are being asked to do more with the same resources. The importance of management continuing to change as economical and social factors dictate cannot be under estimated. The 90's have become the age of productivity (Staten, 1995).

The role of special operations has been expanding within the VBFD since 1986. While this building of the specialty functions has occurred incrementally over time, no additional staff support has been available to distribute the program management workload. A single staff officer has oversight of the Hazardous Materials Team, the Technical Rescue Team, the Maritime Incident Team, and the FEMA Urban Search and Rescue Team (VBFD SOP Manual,

1998). At the time of initial start up, these programs were smaller scale in nature, requiring less resources. All of these programs have increased over time and each has become a major program within the VBFD. The hazardous materials program now includes environmental crimes and terrorism response disciplines in addition to the traditional duties of hazmat that deal with accidental chemical releases. Technical Rescue has expanded to include rope rescue, trench rescue, confined space rescue, structural collapse rescue, and vehicle extrication. The FEMA Urban Search and Rescue (USAR) program has expanded its reporting and budget requirements and the Maritime Incident program was approved to go on line in July of this year.

Previous efforts to address the issue of structure have focused on implementation of a hazardous materials company in 1987 and dedicating a staff battalion level officer as a overall program manager in 1990. This position was initially assigned administrative responsibilities within the Fire Chief's office which transitioned into the specialty function. Additionally, three company officers were charged with beginning the development for the technical rescue component as they were assigned to the technical company in 1990. These Captains were already trained in the necessary disciplines; their charge was to assist in training additional personnel and recruit those personnel to the specialty company.

As the programs grew over following years, there became some friction between the line and staff functions of the department. Unity of command issues evolved as operational battalion officers had dual role companies reporting to them as well as a staff battalion officer that was in charge of special operations (VBFD SOP, 1998). The technical rescue and hazmat companies were involved with traditional engine company operations and the specialties. This dual channel of authority created frustration for the companies, the operational chiefs, and the specialty chief.

Administration of the specialty programs became increasingly difficult as the department moved into the late 1990's. Coordinating training, securing the necessary budget support, and overall program balance began to frustrate the operating core personnel in the programs. The "turf" issues crept into the equation as frustrated chief officers attempted to manage the programs. The staff chief officer began to experience span of control issues as the programs began to increase in scope. The two primary specialties began to branch into new areas. Structural collapse and USAR became more a part of technical rescue as domestic preparedness and environmental crimes took on a larger role with hazmat.

The traditional role of the fire department was being redefined. As a local department responding to an act of terrorism, the VBFD would probably not remain in charge of the scene. Because a terrorism incident comes under the heading of being a threat to National Security, it immediately becomes a crime scene. The fire department would initially be in command of the fire and emergency medical functions, that does not make it a local situation (Bramblette, 1998).

The entire department is effected by the make up and roles and responsibilities of the special operations functions. Chief officers, both line and staff, along with shift personnel at the operating core level, must work with the current organizational structure to deliver the necessary programs. If the structure remains the same, further splintering of the programs will continue to erode effectiveness and efficiency. If the special operations structure is modified, span of control could be reduced, unity of command issues could be resolved, and effectiveness could be improved. This leads to increased customer service, which is the fundamental reason the municipal government exists (VBQSS Guide, 1997).

This applied research project was completed to satisfy the stipulations of the *Executive*

Development course through the National Fire Academy. It specifically touches on several of the fundamentals associated with the unit on managing creativity. The five-phase process of absorption, inspiration, testing, refinement, and selling; together with the section on managers who foster creativity, speak to this project. Implementation of the suggested special operations division modification will have been impacted by these sections.

LITERATURE REVIEW

A literature review was conducted to analyze current documentation relevant to the organization of special operations divisions of fire departments and academic organizational theories. This included: fire service consensus standards, Federal regulations, the Fire Department Accreditation manual, Virginia state laws, articles from periodicals, and organizational theory textbooks. This report includes the items that pertain to the specialty disciplines.

Applicable Laws and Standards

Due to increased awareness, there have been many laws and regulations enacted that dictate how local jurisdictions respond to and mitigate specialty incidents. Through the enactment of these regulatory constraints, injuries and deaths to workers and emergency responders will be prevented (Roth, 1998). There are two primary fire service consensus standards that apply to this research: The National Fire Protection Association (NFPA) Standard 471, *Recommended Practice for Responding to Hazardous Materials Incidents* (1997)*;* and the National Fire Protection Association Standard 1670, *Standard on Operations and Training for*

Technical Rescue Incidents (1999).

NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents* (1997) outlines in the administration chapter that the standard is a recommended practice that applies to all organizations having responsibilities when responding to hazardous materials incidents. The document outlines the minimum requirements that should be considered and the operating guidelines for responding to hazardous materials incidents. There are chapters that address planning, response, safety, personal protective equipment, control, decontamination, and medical monitoring. More stringent guidelines can be enacted by the jurisdiction, if desired. The recommendations should be followed by organizations that respond to hazardous materials incidents and by incident commanders responsible for the management of these types of incidents.

NFPA 1670, *Standard on Operations and Training for Technical Rescue Incidents* (1999) identifies and establishes levels of functional capability for safely and effectively conducting operations at technical rescue incidents. Like NFPA 471, it applies to organizations that respond to technical rescue incidents. The purpose of the standard is to assist jurisdictions with assessing a technical rescue hazard, identifying the level of operational capability, and to establish operational criteria.

Neither of the previously mentioned standards specifically detail an approved operational structure, however, they are organized to be implemented into an organizational structure that is capable of delivering these types of specialty disciplines. National Fire Protection Association Standard 1201, *Standard for Developing Fire Protection Services for the Public* (1994) does address requirements and recommendations on the structure and operation of organizations

providing public fire protection services. Chapter 2 indicates; the fire department shall also carry out compatible emergency services. This lends itself to the special operations functions along with section 2-4.1, where preservation of human life at fires and other emergencies is discussed as the primary responsibility of the fire department. Section 9-2 indicates personnel shall be organized into units or response teams and shall the appropriate equipment and apparatus to carry out their specific function. Chapters 8 and 19 further detail specialized functions, chapter 19 specifically deals with hazardous materials. It states, the fire department is to be the lead agency in protecting the community from the risks of hazardous materials.

Chapter 5 discusses the organizational structure of the fire department in detail. It states, "The fire department shall have an organizational structure that facilitates efficient and effective management of its resources to carry out its mandate as required" (p.6). Organizational plans are also discussed in chapter 5, the department should have a plan that defines the relationships of the individual divisions with the entire organization. This plan should depict the current staffing and status of the department. Specialty companies utilized to assist pumper and ladder companies are further mentioned in section 5-5.3. NFPA outlines processes and procedures for the establishment and utilization of specialty functions within the fire department.

The Code of Virginia allows for cities and counties throughout the state to create and establish fire and rescue districts. These districts have the authority to legally organize and equip departments to protect certain zones from losses due to fire, illness, or injury (Code of Virginia, 1995). Section 27-23.1 of the Virginia State Code indicates, fire departments shall have the necessary rules, regulations, and management structure in place to provide proper protection for the community.

The Occupational Safety and Health Administration (OSHA) is the federal agency responsible for maintaining employee safety in the work environment. OSHA has several mandates published that are applicable to the special operations functions of the fire department. The Superfunds Amendments and Reauthorization Act of 1986 charged OSHA with establishing training requirements for hazardous waste and emergency response personnel (FEMA, 1992). OSHA 29 Code of Federal Regulations (CFR) part 1910.120 deals with emergency response to hazardous materials incidents. It outlines response team requirements such as emergency response plans and procedures for handling emergency responses. OSHA also has mandates published dealing with technical rescue incidents; CFR 1926 deals with trench incidents, while CFR 1910.146 discusses confined space rescue operations. In each, organizations must meet criteria relative to training, equipment, and personnel prior to entering the technical rescue scenario.

Articles and Reports

The Commission on Fire Accreditation International (CFAI) has developed a self assessment handbook to assist fire departments with determining how their efforts benchmark with those of other departments (Commission on Fire Accreditation International, 1998). There are certain core competency indicators that must be met in order to become an accreditated fire department. Both technical rescue and hazardous materials are core competencies that must be accomplished to be recognized. Criterion 5E: Technical Rescue, discusses efficient and effective programs to rescue trapped or endangered persons from any cause such as structural collapse, vehicle accidents, cave-ins, trench rescues, etc. Apparatus, staffing, and operating procedures are all discussed. Criterion 5F: Hazardous Materials, discusses programs in place that protect the

community from hazards associated with uncontrolled releases of hazardous and toxic materials. Apparatus, equipment, personnel, and response times are discussed as being requirements of this accreditation process.

Urban Search and Rescue (USAR) is becoming a discipline in which many fire departments are participating. Following the responses to Hurricane Hugo and the Loma Prieta earthquake disasters, the Federal Emergency Management Agency (FEMA) was tasked with developing a national civilian USAR capability (FEMA Operational System Description, 1998). Twenty- seven teams were established across the country to deliver rescue functions in structural collapses involving heavy concrete construction typical of what is found in most large cities. Many fire departments around the country have modeled their heavy rescue specialties after the one utilized by the 27 USAR teams (DellaRocco, 1998).

Fire departments are becoming the organizations the community looks to in drastic times of need. The primary foundation that the fire and emergency service has traditionally focused on is the protection of life and property (Naum, 1994). As pointed out by past Fire Chief Ron Coleman in a seminar in February 1999; "We are here to be responsible when all hell breaks out." He went on to indicate that the fire department must be ready for the most serious consequences of emergency incidents. Manning (1997) discussed the idea of regional and statewide fire service response to natural and man-made disasters. Many federal assets can take longer than 24 hours to get to a particular site, so it is incumbent on local fire and rescue departments to secure the training and resources to get the necessary equipment and manpower to the incident site in a reasonable amount of time, in order to make a difference.

Fire departments are emergency response capabilities that must learn to expect the

unexpected. Loeb (1998) expounds on the notion of Chief Coleman to be able to deal with uncertainty during emergency incidents. Chief Loeb says "If there are any ironclad rules in firefighting, one of them has to be that nothing can ever be taken for granted"(p.58). The community, which includes: property owners, structure occupants, the city council, and firefighters themselves; all want to be satisfied customers after the incident operations.

The Wingspread IV Conference held in Dothan, Alabama in October 1996 by the International Association Of Fire Chiefs (IAFC) discussed emerging issues of national importance that effect fire and emergency services. Two of the six emerging issues have relevance to the specialty functions. Customer service was highlighted, as the fire service must broaden its focus from a traditional view of fire suppression, to one of meeting the expanding needs of its customers. A key is to increase value to the community by providing additional programs that cost little or nothing to implement. Service delivery was also a recognized emerging issue; the thought was that the fire service must have standards that functionally define the organization in terms of levels of service delivered to the general public. How the fire department operates and deploys resources to mitigate emergency situations is coming under increased scrutiny as the fire service becomes a more complex group of organizations.

Naum (1995) discussed the fact that demands and influencing factors impacting the fire department are changing. Due to the increased level of sophistication required to handle different situations, operating companies must have higher technical intervention skills. Many fire organizations have recognized the need to deploy specialized teams to meet these needs. This type of incident is outlined by Collins (1997) as he recants an incident involving a confined space . Due to the high mortality rate among would-be rescuers, confined space incidents are

considered the most hazardous incidents that firefighters are confronted with.

Several authors (Mellott, 1992; Reimer, 1996; Rhea, 1997) indicate the need to perform some kind of target hazard evaluation to determine the need for specialty functions in a jurisdiction. The results of the evaluation and review should provide the groundwork for determining the need to establish special operations roles. Rhea (1997) indicates that even if fire organizations are not required to perform special duties, the organization must still protect employees that may have to operate in these types of environments. Fire and rescue departments across the country have the primary responsibility for response to all types of special calls; even if they occur on a very infrequent basis (Reimer, 1996).

The element of rescue has evolved from basic fireground and emergency responses into specialized incident operations (Naum, 1994). Incidents have moved beyond the typical traditional functional areas, evolving into areas that will require response capabilities that are more specialized. McGary (1985) explains that at one time or another, every fire department has had an unusual incident that taxed its resources. As these incidents increase in frequency and complexity, the department will consider a specialty response team.

Sargent (1991) stressed the need to deliver special operations disciplines such as hazardous materials and technical rescue capabilities. Wright (1993) compares present-day emergency response to a sport, when a special talent checks into the lineup to run a particular play. Like a professional sport, the teams train in order to execute the basics flawlessly. Fire specialty teams must be able to accomplish tasks with strict adherence to standards and a certain level of competence. The successful outcome of the special incidents will rely on the training and skills of the firefighters and the organization and deployment of resources by department

management (Naum, 1994).

Unusual incidents often exceed the scope of written guidelines, causing emergency responders to rely heavily on experience and judgement (Collins, 1999). Peters (1991) highlighted the need to have a mission for specialty companies. He suggests responding to emergencies with specialized equipment and highly motivated personnel, trained in specialty functions. The incident commander could then utilize the company to assist in the overall mission of the department - saving lives and protecting property.

Naum (1995) suggests a planning process to implement a specialty team. The key is to develop commitment and involvement between command and administrative functions, together with support from staff and line positions. The direction, composition and organization of the specialties must be determined. Training levels, minimum service levels, funding, and impact upon the rest of the department are also factors to consider (Sargent, 1991).

Academic Organizational Theory

Reynolds (1998) defined an organization as "a social entity, goal directed, made up of deliberately structured activity systems within a definable boundary." Ivancevich and Matteson (1998) consider the organizational structure to be "the anatomy of the organization, providing a foundation within which the organization functions" (p.577). Shafritz and Ott (1997) describe the following ten characteristics of organizations: (a) Structure, which has to do with the internal functions of the organization; (b) Formulation, which includes the written rules, policies, and regulations; (c) Specialization, dealing with division of labor issues or how to break up tasks; (d) Standardization, references the degree to which everything is the same; (e) Hark, has to do with the chain of command and span of control; (f) Complexity, which addresses inertia or movement

within the organization; (g) Professionalism, references credentialing and higher education; (h) Centralization or decentralization of resources; (I) Personnel ratio refers to where the organization places people; (j) Size highlights departments or divisions, relationships, and number of personnel.

According to Borgatti (1997), Henry Mintzberg proposed a theory that divided most organizations into five basic parts. At the bottom of the organization lies the operating core personnel. These are the people that do the most basic level of service delivery or product production. At the top of the organization there is a strategic apex. This level of the organization is charged with ensuring that the organization executes its mission. This area also has external influencers such as owners, government agencies, and communities. In the middle of the operating core and the strategic apex lies the mid-line managers. This level oversees the workers and transmits authority from the top of the organization to the bottom. These three levels are considered line functions of the organization. Outside of the line positions lie the technostructure positions, which include analysts that look at budgetary items and the technology needed by the group. Also outside of the line functions are the support staff functions, they include administrative services such as: public relations, legal counsel, mail services, and secretarial support. Both the technostructure and support staff function areas are considered staff positions.

Borgatti (1997) indicates that line and staff functions can be traced back to traditional treatments of formal organization. Line activities usually involve the substantive operations of an agency, while staff functions consist of support and advisory activities. Staff roles tend to enhance the ability of line personnel to carry out their job functions.

Gulick and Urwick (1937) conceived the acronym POSDCORB, which substantiates many of the basic tenets that organizations operate from. It stands for: Planning, organizing, staffing, directing, coordinating, reporting, and budgeting. They further indicated coordination and cooperation were needed to make true division of labor work. According to Ivancevich and Matteson (1997), division of labor concerns the extent to which jobs are specialized. They continue to say specialization can be accomplished by method and application of the method. The grouping of jobs is necessitated by the amount of time and effort required to coordinate them. As the number of specialized jobs in an organization increases, there comes a point where they can no longer be managed by a single individual.

Literature Review Summary

The literature review provided an opportunity to identify the established mandates and standards that impact special operations functions. There are several NFPA standards in place that influence fire department structure and the delivery of specialty operations. Several OSHA laws mandate how hazardous materials and technical rescue programs are delivered.

Many members of the fire and rescue community have devoted tremendous amounts of time and effort towards furthering service delivery in the special operations arena. There are a myriad of organizations involved in the standardization process of the disciplines. Many authors have discussed the fact that society is becoming more technical in nature and the fire and rescue services must be prepared to deal with the increases in technology. This can be accomplished by providing the specialty programs in a variety of combinations.

Academic organizational theory models provide insight into logical organizational arrangements to facilitate the designs of special operations functions. Many of the early

organizational designs highlight issues that are prevalent today.

All of the literature reviewed produced meaningful insights towards the design of an organizational structure that supported the special operations functions. None of the authors developed an organizational structure for a special operations division of a fire department, which is the purpose of this research.

PROCEDURES

This research project utilized an action research methodology to analyze national standards, the opinions of chief officers within the VBFD and from around the country, and traditional organizational theory models. The intent of this process was to redesign the special operations organizational structure of the VBFD in order to improve service delivery to the citizens of the city.

Literature Review

The procedures included a literature review of articles from fire organization periodicals, materials from the Learning Resource Center (LRC) at the National Fire Academy, and organizational theory textbooks. The magazine articles were either mailed to the author by the LRC or borrowed from professional collections of others. Consensus standards and federal regulations were researched utilizing NFPA and OSHA documents. The organizational theory models were either obtained via the Internet or through educational textbooks.

Surveys

A survey was designed and sent to all district and battalion level officers in the VBFD concerning the arrangement of the Special Operations Division. A telephone survey concerning

specialty structure was conducted with fire departments that were similar demographically to the VBFD from around the country.

A special operations program survey was developed and sent to all battalion and district level officers in the VBFD. This group includes five district level personnel and 16 battalion level personnel. Of the 21 surveys distributed, 14 were answered and returned; for a return rate of 66.6 percent. The questions developed were structured to extract the opinions of the officers concerning: (a) programs important to the mission of the VBFD; (b) other specialty programs the VBFD should be delivering; (c) current and possible future recommendations concerning structure of the division; (d) selection process for specialty team members; and (e) institution of a squad concept.

A telephone survey was also developed and delivered to nine fire departments, similar demographically to the VBFD. The telephone survey was chosen in an effort to retain as much process control as possible. The fire departments surveyed were: Austin, Texas; Denver, Colorado; Indianapolis, Indiana; Newport News, Virginia; Norfolk, Virginia; Oklahoma City, Oklahoma; Orlando, Florida; Richmond, Virginia; and Saint Louis, Missouri. The information solicited was similar to the survey conducted with the VBFD officers, but it was more in depth concerning the structure of the special operations areas. The departments were randomly selected utilizing the National Directory of Fire Chiefs and EMS Administrators (1999).

Assumptions and Limitations

There were several assumptions made concerning the procedures section of this applied research project. First, it was presumed that the authors of reviewed materials performed

accurate initial research. Next, the conclusion was made that the respondents answered the research surveys objectively. Finally, it was assumed that the representatives of the fire departments surveyed were qualified to answer the questions.

There were also several areas limiting the research. First, there is no standard definition of the number or specific types of disciplines that are considered special operations functions. These disciplines differ among fire departments depending upon the risk factors identifying the types of services required. Second, the literature reviewed contained little information or examples of actual recommended structure for special operations divisions. Third is the time factor involved with most adult learning environments. The EFO program, like most higher level educational programs across the country that cater to the adult learner, is compromised by the fact that the student must continue with the responsibilities of work life while accomplishing the project.

RESULTS

1. What are the national standards that address fire department special operations structure?

Fire and rescue organizations across the nation have the primary responsibility for response to and mitigation of all types of specialty calls (Naum, 1994). There are federal mandates and consensus standards that speak to the requirements for special operations teams to handle incidents that range from chemical leaks to structure collapses. These mandates and standards are discussed in the literature review section of this project. Not only do these requirements discuss the existence of specialty teams, they dictate methods for operating at

specialized incidents (Reimer, 1996). Even though the standards speak to the development and operations of specialty teams, they do not specifically lay out an organizational structure for special operations divisions. NFPA 1201, *Standard for Developing Fire Protection Services for the Public* (1994) does address requirements and recommendations on fire department structure, however is does not specifically address special operations structure. Actual organizational structure is left to the particular jurisdiction to determine.

2. What are the specialty programs the VBFD must deliver and how do they compare with what other fire departments deliver?

Table 1

Summary of VBFD Specialty Programs

Specialty Discipline	Total # of Responses	Percentage of Respondents
ALS Medical Response	8	57.1
Confined Space Rescue	12	85.7
Environmental Crimes	14	100
Hazmat Operations	13	92.8
Helicopter Operations	3	21.4
Maritime Response	12	85.7
Rope Rescue	12	85.7
Structural Collapse	13	92.8
Trench Rescue	12	85.7
USAR Operations	11	78.5
Vehicle Extrication	13	92.8
Water Rescue	8	57.1
Terrorism/WMD	13	92.8

As summarized by Table 1, the chief officers of the VBFD felt it necessary to deliver

many of the current programs. Dealing with environmental responses was the highest rated reply at 100 percent. Hazmat operations and several of the technical rescue disciplines also rated high in their opinion. It was interesting that ALS medical response did not receive very high marks. The trends across the nation, and here in the VBFD, are that fire departments are spending more and more time in the emergency medical service arena. The helicopter program, which was started seven years ago, received little support.

Of the nine fire departments surveyed nationwide, four have a special operations division. The number of personnel assigned to specialty functions varies greatly from department to department. Every reporting department indicated the special operations functions are broken down across the department. The programs are delivered primarily by dual role personnel, meaning that in addition to standard firefighting duties, the personnel are also responsible for delivery of the specialty functions. The management responsibilities are split between line and staff functions. There is no standard structure employed by the reporting departments concerning program delivery. The ranks of supervisory personnel vary greatly, as do the line and staff duties of the personnel. Every department surveyed indicated 100 percent participation in the hazmat and technical rescue specialties. The exact disciplines of technical rescue varied between departments. Water rescue capabilities are being delivered by 77.7 percent of the departments surveyed. Fifty-six percent of the respondents have a competitive process in place that identified candidates for the specialty positions. Seniority, training, and testing are examples employed to select candidates. The squad company concept is being delivered by 88.8 percent of the responding departments.

3. How do the classic academic models of organizational theory compare to how the

VBFD special operations division is structured?

There are many scholastic tenets of organizational theory that can be applied to the special operations functions of the VBFD. As mentioned earlier in this project, span of control and unity of command create a basis from which many of the other principles of organizational structure can be applied to the VBFD. These issues have to do with reporting to one supervisor, and the amount of personnel or the number of functions the supervisor can effectively manage. Spinning off from span of control and unity of command are several examples; structure, specialization, hierarchy, centralization or decentralization, and size of the division.

The model introduced by Mintzberg is similar to the structure of the VBFD special operations section. This model depicts the organization as made of five parts; the operating core, the mid-level positions, the strategic apex, the technostructure, and the support staff. The first three mentioned are line positions, while the other two are considered support sections. The program manager is in a staff position that is outside the operational chain of command. The operating core personnel; those in the hazmat and technical rescue companies report to mid-level managers and a strategic apex that is made up of line positions. As well, the company personnel have some responsibility to the staff officer when dealing with the specialty functions.

Proposed Structure

Based upon the purpose of this applied research project, a proposal for the re-structuring the VBFD special operations division is included as an organizational chart in Appendix A. The proposed structure involves moving the management and delivery of special operations functions from a staff program management role, to one of a line function involving four chief officers. This change will enhance the ability of the VBFD to provide these necessary services by

reducing the span of control of the specialty program manager and providing unity of command for operating core personnel.

The proposal re-defines the battalion responsibilities that are currently in place. Instead of four traditional battalions in the operations division of the department on each shift, there will be three conventional battalions and a special operations battalion. This will entail moving the specialty companies out of their current battalions and under the command of a battalion officer for each of the three shifts. Two of the three standard battalions will each pick up an additional company, while the special operations battalion will take over all responsibilities for the hazmat, technical rescue, FEMA, and maritime programs. The special operations division will have oversight provided by one of the four operations district chiefs. Each of the specialty programs will be ultimately managed by one of the three shift specialty battalion chiefs. For example, the A shift battalion chief would manage all of the specialties on A shift, while providing program management for the technical rescue and FEMA programs. The B shift battalion chief would manage all of the special operations functions for B shift in addition to being the program manager for the hazmat program. Finally, the C shift battalion chief would handle special operations for C shift, while providing program management for the maritime program.

Currently, as depicted by the organizational chart in Appendix B, the special operations disciplines are being provided by dual-role line personnel. The specialty companies are included in the standard operational battalions to deliver firefighting and EMS services, as well as their specialty function. The specialty companies report to a field battalion chief concerning traditional job functions, while they report to the special operations battalion chief concerning the specialty functions. The special operations chief currently has the management

responsibilities for the delivery of the hazmat, technical rescue, FEMA USAR, and maritime incident programs.

DISCUSSION

The current VBFD operational arrangement concerning special operations is similar to those found across the country. Of the nine fire departments surveyed, only four have a special operations division or office. Most departments provide the specialty functions with dual-role operational personnel that also provide firefighting and EMS services.

As discussed at the Wingspread IV conference in Dothan, Alabama (IAFC, 1996), two emerging issues are relevant to special operations; customer service and service delivery. The fire department must broaden its focus in order to meet the expanding needs of the community. Manning (1997) and Coleman (1999) both discussed the need for fire departments to be capable to provide specialty services if needed. Customer service is the fundamental reason municipal government exists (VBQSS, 1997). Several authors (Naum, 1994; Reimer, 1996; Sargent, 1991) stressed the need for fire departments to be able to deploy specialty functions to mitigate the unusual emergency incidents. These types of responses must be regulated by appropriate standards in an effort to reduce the amount of potential injuries (Roth,1998). OSHA and the NFPA have many standards and regulations in place to support these efforts.

The review of the national standards along with application of fundamental organizational theory supports the operationalization of the special operations functions within the VBFD. NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents*; NFPA 1670, *Standard on Operations and Training for Technical Rescue Incidents*; NFPA 1201, *Standard for developing Fire Protection Services for the Public*; along with OSHA

CFR 1910.120, CFR 1926, and CFR 1910.146 all provide recommendations for delivery of special operations programs. These documents along with the Commission on Fire Accreditation International (1998) all reference special operations functions, but they do not contain clear examples of organizational structure to support specialties. Mintzberg provides a model that clearly can be applied to the formulation of a special operations organizational structure.

Utilization of the Mintzberg model supports the reorganization proposal from the standpoint of aligning line functions of the special operations division under a single command in the operations section of the department. The specialty battalion chiefs will have line authority to deliver the programs. From the author's perspective, this will have a tremendous impact upon the entire department; especially the special operations battalions. Span of control will be reduced as the special operations battalion chief's will each have the ultimate authority for one of the specialty programs. Unity of command issues will be addressed because each of the three shifts will have a chief officer on duty 24 hours a day to oversee the delivery of the specialties. The company officers will be reporting to one line battalion officer versus a line officer for traditional functions and a staff officer for the specialty functions.

This proposal will also create an additional staff battalion level position within the organization. This position, the current battalion chief in charge of special operations, could be utilized for another staff opportunity. Research and development, data management, and budget are all areas within the organization that could be looked at in the future.

RECOMMENDATIONS

Based upon the findings of this project, the Virginia Beach Fire Department should put a special operations division into place during the upcoming department reorganization. This specialization; based upon organizational theory, national mandates and standards, and the needs of the VBFD, will enhance service delivery to the citizens of the city.

The proposed organizational chart in Appendix A will provide a basis on which to proceed with the realignment of the existing districts within the VBFD. This plan will create a dedicated district officer and three battalion officers for special operations without increasing staff or the budget. Each of the three shifts will get a battalion officer for specialty oversight and program management.

All district and battalion level officers in the department should be surveyed or interviewed by the Fire Chief and Deputy Chief to determine the most desirable chief officers to place in these positions. The criteria used to decide placement of the officers should include training in the specialties, desire or attitude to be in the positions, and abilities to perform the necessary functions of managing the different programs.

The special operations programs should be divided among the three specialty battalion officers in order to reduce span of control and facilitate effective management practices. Each of the three battalion officers becomes the expert in their particular field and has the ultimate responsibility and authority to manage their particular function. As well, the battalion level personnel become cross-trained in each of the other specialties. This will facilitate the expansion of all the special programs, as hazmat personnel, maritime response personnel, and technical rescue personnel have a single chief officer that promotes shift interaction among the specialty

teams.

The current administrative position that provides special operations oversight should remain as an administrative function for the department. This position could be utilized to expand upon other areas of the organization. Research and development of new technology, data management, financial management, and marketing are several areas that could be enhanced with the proper utilization of administrative positions.

This plan should also provide opportunity for expansion of the specialty programs for the future. As the specialty battalion officers are placed into position, they will have the chance to build upon the existing programs. For instance, the maritime program could be expanded so that the fire department provides a water rescue function in addition to maritime firefighting capabilities. The hazmat and technical rescue teams could be placed on squad type apparatus in order to deliver vehicle extrication capabilities across the city and rapid intervention teams for firefighting operations.

This applied research project has provided a basis to expand existing specialty programs and create possibilities for new opportunities as the Virginia Beach Fire Department moves into the next century. It is the hope of the author that people both internal and external of this organization will be able to expound upon the principles presented to enhance fire and rescue service capabilities around the world.

REFERENCES

Borgatti, S. P.(1999, February). *The five basic parts of an organization*. [On-line]. Available: http://www.analytictech.com/mb021/five.htm.

Bramblette, P.M. (1998, May). Terrorism response command - who's in charge? *Responder*, 5 (5),11.

City of Virginia Beach. (1997, October). *Guide to the virginia beach quality service system.* Virginia Beach, VA: Author.

Clark, S. (1995). *Emergency management in the 90's.* [On-line]. Available: http://www.emergency.com/emermgt.htm.

Coleman, R. (1999, February). *Going for the gold*. Seminar conducted at the Virginia State Fire Chief's Conference, Virginia Beach, VA.

Collins, L.(1997, November). A command approach to confined space rescue. *Fire Chief*, pp. 34-38.

_____. (1999, June). Unusual tools for unusual rescue calls. *Fire Engineering*. p.109.

Commission on Fire Accreditation International. (1997). *Self assessment team member handbook* (pp.16-17). Fairfax, VA: International Association of Fire Chiefs.

DellaRocco, M.(1998, September). USAR regional response: an exercise in teamwork. *Fire Engineering*, p.126.

Federal Emergency Management Agency, United States Fire Administration, National Fire Academy. (1992, August). *Initial Response to Hazardous Materials Incidents*, pp.1-3.

Federal Emergency Management Agency, Urban Search and Rescue Response System. (1998). *Operational system description and mission operational procedures*, p.2.

Gulick, L., & Urwick, L. (1937). *Papers on the science of administration*. New York: Institute of Public Administration.

International Fire Service Training Association. (1989). *Fire department company officer*, (2nd ed.,p.12). Stillwater, OK: Oklahoma State University.

Ivancevich, J.M., & Matteson, M.T. (4th ed.). (199). *Organizational behavior and management*. Boston, MA: McGraw-Hill.

Loeb, D.L. (1998, April). Expect the unexpected II. *Fire Chief*. p.60.

Loflin, M. L., & Kipp, J. D. (1997, February). Using the classic risk management model. *Fire Engineering*. p. 63.

Manning, B. (1997, March). How progressive are you? Is your department up to date? *Fire Engineering Interactive Editorial*. [On-line]. Available: http://www.fire-ems.net/fire-eng/mar97.

McGary, R. A. (1985, May). Specialty teams. *Fire Command*. pp.28-30.

Mellott, K.D. (1992, November). Building a specialized rescue capability on a budget. *Fire Chief*. pp.36-39.

National Public Safety Information Bureau. (1999). *National Directory of Fire Chiefs and EMS Administrators*, (8th ed.). SPAN Publishing: Stevens Point, WI.

National Fire Protection Association. (1997). NFPA 471: *Recommended Practice for Responding to Hazardous Materials Incidents.* Quincy, MA: Author.

_____. (1994). NFPA 1201: *Standard on Developing Fire Protection Services for the Public*. Quincy, MA: Author.

_____. (1999). NFPA 1670:*Standard on Operations and Training for Technical Rescue Incidents*. Quincy, MA: Author.

Naum, C. J. (1994, December). Planning and developing a special technical rescue team, part 1. *Voice*, 23 (11), 29-30.

_____. (1995, January). Planning and developing a special technical rescue team, part 2. *Voice*, 24 (1), 37-39.

_____. (1995, April). Planning and developing a special technical rescue team, part 3. *Voice*, 24 (4), 41-43.

Occupational Safety and Health Administration, United States Department of Labor. (1994). 29 Code of Federal Regulations, Part 1926, Subpart P: *Excavations*. Washington, DC: Author.

_____. (1996). OSHA 29 Code of Federal Regulations, Part 1910.120: *Hazardous Waste Operations and Emergency response.* Washington, DC: Author.

_____. (1998). OSHA 29 Code of Federal Regulations, Part 1910.146: *Permit*-Required *Confined Spaces*. Washington, DC: Author.

Peters, W. C. (1991, October). Starting up a rescue company. *Fire Engineering*. pp.16-22.

Reimer, M. (1996, September/October). How to start a technical rescue team. *Rescue*, 9 (5), 30-34.

Rhea, R. (1997, March). Organizing and training special rescue teams. *Fire Engineering*. pp. 75-81.

Reynolds, K. R. (1998). *Organizational Theory*. Virginia Beach, VA: Master's Program,

Troy State University.

Roth, S.T. (1998, May/June). Hazmat History. *Industrial Fire World*, 13 (3), 16.

Sargent, C. S. (1991, June). Forming a technical rescue team. *Fire Chief*. pp. 34-36.

Shafritz, J. M., & Ott, J. S. (1996). *Classics of organizational theory*. pp 430-432. Fort Worth, TX: Harcourt Brace.

Virginia Beach Fire Department. (1998). *Hurricane hugo response after action report*. Virginia Beach, VA: Author.

_____. (1998). *Standard operating procedures*. Virginia Beach, VA: Author.

_____. (1999, June). *Quarterly report*. Virginia Beach, VA: Author

Virginia State Fire Marshals Office. (1995). *Fire protection and related laws of Virginia excerpted from the code of Virginia.* Richmond, VA: Author.

Wright, T.O. (1993, March). A special team for every tangle. *Fire Chief*, 37 (3), 88-91.

Appendices Not Included. Please visit the Learning Resource Center on the Web at http://www.lrc.fema.gov/ to learn how to obtain this report in its entirety through Interlibrary Loan.